

IN THE CLAIMS:

1.-34. (Cancelled)

D/ 35. (Currently amended) Sputtering chamber comprising ~~at least one a~~ single sputtering source with a new sputter surface at least approximately symmetrical with respect to a first axis oriented perpendicular to said new sputter surface, a substrate carrier with a substrate receiving surface, which substrate carrier is arranged to be drivingly rotatable about a second axis, wherein said first and said second axes are oblique with respect to one another at ~~an angle of less than 90°~~, and said sputtering source is a magnetron sputtering source with ~~at least one closed loop, tunnel shaped~~ a magnetron magnetic field ~~pattern~~ looping around said first axis and with ~~constant~~ symmetric field polarity as viewed in a ~~direction along said closed loop~~ cutting plane through said new sputter surface and containing said first axis, said receiving surface having a diameter of at least 160 mm.

36. (Previously added) The chamber of claim 35, wherein said new sputter surface is substantially rotationally symmetrical with respect to said first axis.

37. (Previously added) The chamber of claim 35, wherein said first axis and said second axis intersect at least approximately.

38. (Previously added) The chamber of claim 35, wherein, with respect to an angle β between said first axis and said second axis, $30^\circ \leq \beta \leq 60^\circ$.

39. (Previously added) The chamber of claim 35, wherein, with respect to an angle β between said first axis and said second axis, $40^\circ \leq \beta \leq 55^\circ$.

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40. (Previously added) The chamber of claim 35, wherein, with respect to an angle β between said first axis and said second axis, $43^\circ \leq \beta \leq 50^\circ$.

41. (Previously added) The chamber of claim 35, wherein an angle β between said first axis and said second axis is approximately 45° .

42. (Previously added) The chamber of claim 35, wherein said first axis and said second axis have a smallest mutual spacing situated at least approximately on a surface which is to be sputter coated of a substrate applied to said substrate carrier.

43. (Previously added) The chamber of claim 35, wherein said substrate carrier is located within said chamber at least approximately horizontally.

44. (Cancelled)

45. (Previously added) The chamber of claim 35, further comprising at least two of said sputtering sources.

46. (Previously added) The chamber of claim 35, wherein there is provided in said new sputter surface at least one circular erosion ditch said toroidal magnetic field beneath said ditch having a circular locus of larger erosion depth, the radius of said locus with respect to said first axis being r_{Tr} said first and second axes having a smallest mutual spacing at a locus spaced by a distance D from said new sputter surface and wherein $1/4 \leq r_{Tr} / D \leq 2/3$.

47. (Previously amended) The chamber of claim 35, wherein said new sputter surface is substantially rotationally symmetrical with respect to said first axis and has a diameter Φ_T and wherein a locus of smallest mutual spacing of said first and of said second axis has a distance D to said new sputter surface and wherein $3/4 \leq \Phi_T / D \leq 2$.

48. (Previously amended) The chamber of claim 47, wherein $\Phi_T =$ approx. 1.2 D.

49. (Previously added) The chamber of claim 35, wherein said substrate carrier has a circular receiving surface for at least one substrate said receiving surface having a diameter Φ_s with respect to said second axis, a locus of smallest mutual spacing of said first and second axes having a distance D from said new sputter surface and wherein $\Phi_s / D \leq 1.8$.

50. (Previously amended) The chamber of claim 49, further comprising at least one of said substrate on said receiving surface said locus being situated at least approx. on a plane defined by a surface of said at least one substrate to be sputter coated.

DI 51. (Previously added) The chamber of claim 35, wherein said new sputter surface is rotationally symmetrical with respect to said first axis and said substrate carrier comprises a substrate receiving surface which is rotationally symmetrical with respect to said second axis, said new sputter surface defining for a diameter Φ_T with respect to said first axis and said substrate receiving surface defining for a diameter Φ_s with respect to said second axis and wherein $0.5 \leq \Phi_s / \Phi_T \leq 2.4$.

52. (Previously added) The chamber of claim 51, wherein $1 \leq \Phi_s / \Phi_T \leq 2.4$.

53. (Previously added) The chamber of claim 35, wherein said substrate carrier has a substrate receiving surface which is rotationally symmetrical with respect to said second axis and defines, for a diameter Φ_s with respect to said second axis, $50 \text{ mm} \leq \Phi_s \leq 400 \text{ mm}$.

54. (Previously added) The chamber of claim 53, wherein there is valid
 $50 \text{ mm} \leq \Phi_s \leq 300 \text{ mm}$.

55. (Previously added) The chamber of claim 54 wherein said diameter
 Φ_s amounts to one of 64 mm and of 120 mm and of 160 mm and of 240 mm.

56. (Previously added) The chamber of claim 35, wherein said
substrate carrier is linearly drivingly displaceable in a direction of said second
axis.

57. (Previously added) The chamber of claim 35, wherein a surface of
said substrate carrier facing said new sputter surface and said new sputter
surface bound a process space on two sides thereon.

58. (Currently amended) A method for manufacturing a coated
~~workpieces~~ substrate with a diameter of at least 160 mm, comprising ~~the steps of~~
introducing ~~a workpiece~~ said substrate into a sputtering chamber,
rotating said workpiece about a ~~rotational~~ first central axis of said
substrate,

providing a single magnetron sputtering source with a sputtering surface
and having a second central axis which is oblique with respect to said ~~rotational~~
first central axis ~~at an angle of less than 90°~~ of said substrate,

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magnetron sputter coating said ~~workpiece~~ substrate by said source
~~thereby providing at said source at least one closed loop, tunnel-shaped magnetic~~
~~field pattern with a constant field polarity considered in a direction along said~~
~~closed loop.~~

59. (Previously added) The method of claim 58, wherein said coated
substrate is one of a data storage disk and of a wafer.

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60. (New) The chamber according to claim 35, wherein the new
sputtering surface is smaller than the surface of one of said substrate being
coated and said receiving surface of said substrate carrier.
